6. The increase near the ground is due to convection, turbulence, and somewhat to topographical influence.

It is extremely gratifying to know that such an excellently equipped station is being maintained, and future reports on the results of the various other branches of the work will be awaited with the greatest interest.—*L. T. S.*

## THE ROYAL METEOROLOGICAL SOCIETY'S "RAINFALL ATLAS OF THE BRITISH ISLES"

The extent to which amateurs with an interest in the weather can supplement, or, indeed, make possible, a scientific work of great importance, is illustrated by this atlas. The British Rainfall Organization is composed of such amateurs. In the course of its long history it has enlisted the cooperation of some 10,000 voluntary observers. Its records placed at the disposal of the committee of the Royal Meteorological Society directing the preparation of the atlas the accumulated data from some 3,000 stations. This is an average of about one station to every 40 square miles, in an area three quarters the size of California.

The maps are beautifully printed in colors, and are as follows:

1. A generalized topographic map showing principal towns, the county boundaries, and chief rivers.
2. Average annual rainfall (35-year period, 1881–1915).
3. Rainfall of the wettest year (1872).
4. Rainfall of the driest year (1887).
5. Annual rainfall as percentage of the average of 1881–1915, for each year from 1868 to 1923, inclusive.
6. Twelve monthly rainfall maps.

Dr. Hugh Robert Mill contributes a very full introduction, describing the history of the British Rainfall Organization, briefly summarizing the facts shown by the maps of rainfall distribution, and presenting several tables.

Of the tables, that showing "Areas of the different rainfall zones over the British Isles" is of particular interest, the zones being the areas between limiting isohyets. In variation of rainfall from region to region, the British Isles rival our west coast States. Fifty-three square miles, mostly along the northern shore of the Thames estuary, have annually less than 20 inches, while 22 square miles of mountain country in northern Wales, northern England, and western Scotland average over 150 inches annually. Slightly more than 1,000 square miles have over 100 inches, and roughly one-fourth of the total area of the British Isles have 30 inches or less.

A table of percentage variations of annual rainfall, 1868–1923, brings out the fact that in 73 per cent of the years the generalized average rainfall for the British Isles has departed only 10 per cent or less from the normal, and in 87 per cent the departure has been 15 per cent or less.

To discuss at length the information embodied in this splendid work is quite beyond the scope of the present notice. The atlas is surely a fitting monument to the labors of Symons who organized and for many years directed the British Rainfall Organization, and to the zeal with which his successors, Wallis, Mill, and Salter have carried the work forward.—*B. M. V.*

## THE RAINFALL OF FLORIDA

By GRAGG RICHARDS

[Author's abstract of a dissertation submitted to the Graduate Board of Clark University, Worcester, Mass., in partial fulfillment of the requirements for the degree of doctor of philosophy. The full text, with charts, may be consulted in the library of Clark University]

In presenting graphically the rainfall of Florida the standard methods, such as those used by Kincer for the United States, have been used. The data available for the 30-year period 1895–1924 are from 88 stations within the State, with records of 5 years or over, those covering less than the entire 30 years being adjusted to that basis.

While the range of mean annual rainfall for 30-year stations is from 57.88 inches at Pensacola to 37.19 inches at Key West, adjusted stations indicate values as extreme as 70.2 inches at Molino (16 years) and 32.1 inches at Sand Key (12 years). Except for the interior of the peninsula and the region of the keys, the mean annual rainfall is over 50 inches.

The mean of Florida as a unit, weighted by area from the chart of mean annual rainfall, is 53 inches, with 89.5% of its area receiving between 45 and 60 inches.

During the 30-year period all parts of the State, except the keys, have received over 60 inches in some years, while over 90 inches has been recorded at stations in west Florida and on the southeastern and western coasts of the peninsula. Minimum records also tend to be less on the coast than in the interior, varying, in general, from 30 to 40 inches.

For all of Florida more than half of the annual rainfall is in the half year April–September, varying from a nearly equal division in west Florida to over 70% in the southwestern part of the peninsula.

For the State as a whole, 19% of the mean annual rainfall occurs in spring, 40% in summer, 24% in autumn, and 17% in winter, but the actual distribution varies greatly with location. The southwestern coast of the peninsula receives nearly half of its precipitation in summer, while the southeast coast has heavier rainfall in autumn than summer, with over 35% of the annual amount. Extreme seasonal values vary from 48.33 inches, for New Smyrna, in an autumn (1924), to 0.17 inch, for a winter season (1906–1907), at Orlando.

All stations in Florida have a mean rainfall of not less than 6 inches in some months, the maximum varying from July in west Florida to October at points on the east coast. November is generally the month with least mean rainfall. All stations record less than 3.5 inches, as a mean, for some months, many between 1.5 and 2 inches.

New Smyrna has recorded the highest absolute maximum monthly rainfall with 39.08 inches, while Pensacola has a high record of but 18.58 inches, and Key West of but 16.99 inches. Practically all of Florida has experienced a rainless month at some time during the period, though the lowest record for Brooksville is 0.10 inch.

Mean monthly rainfall data have been used for showing rainfall types. For this purpose, Ward, showing actual means, rather than Kincer, with monthly proportions of annual rainfall, has been followed, thus giving an idea of actual amounts, as well as proportions, in a single graph.